



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appeal No. _____

#25/Brief

gw 08/28/03

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AUG 21 2003

TECHNOLOGY CENTER R3700

Appellants: Wolfgang HUBER

Application No.: 09/559,886

Group No.: 3729

Filed: April 26, 2000

Examiner: A. Dexter Tugbang

For: A METHOD, APPARATUS AND SYSTEM FOR
OPERATING AN AUTOMATIC COMPONENT MOUNTING
UNIT FOR MOUNTING COMPONENTS ONTO A
SUBSTRATE OF AN ELECTRICAL ASSEMBLY,
INCLUDING MOUNTING MEMBERS WITH RESPECTIVE
STORAGE DEVICES

Attorney Docket No.: 32860-000241/US

BRIEF ON APPEAL ON BEHALF OF APPELLANT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

August 18, 2003

*(see on page labelled pg. 1
of Brief)

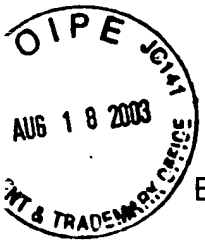


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BRIEF ON BEHALF OF APPELLANT

In support of the Notice of Appeal filed June 16, 2003, appealing the Examiner's final rejection mailed December 17, 2002 of each of pending claims 10-32 of the present application which appear in the attached Appendix, Appellant hereby provides the following remarks.

I. REAL PARTY IN INTEREST

The present application is assigned to Siemens Aktiengesellschaft of Munich, Germany, by an Assignment recorded on September 19, 2000, Reel 011106, Frame 0835.

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II. RELATED APPEALS AND INTERFERENCES

TECHNOLOGY CENTER R3700

The undersigned, the Assignee and the Appellant do not know of any appeals or interferences which would directly affect or which would be directly affected or have a bearing on the Board's decision in this Appeal.

III. STATUS OF THE CLAIMS

Claims 10-32 are reproduced in the attached Appendix A and are the claims on Appeal. Each of these claims is currently pending in the application. Original claims 1-9 of the application were canceled during the prosecution of the application without prejudice or disclaimer of the subject matter contained therein.

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IV. STATUS OF AMENDMENTS

Amendments dated March 17, 2003 and May 5, 2003 were filed with the U.S. Patent Office in response to the Final Rejection dated December 17, 2002, and are under consideration at this time.

TAKEN FROM THE APPLICATION

V. SUMMARY OF THE INVENTION

The present application relates to a method, apparatus and system for operating an automatic component mounting unit that has a number of different mounting members and that is readily calibrated for optimally mounting a variety of different components onto a variety of different substrates. The automatic mounting unit of the present invention utilizes a number of members, such as, the component mounting head, feeding and sensor members, that can be readily adapted to a variety of different components and substrates.

In an embodiment, each of the members of the component mounting unit includes a respective data storage device. The data storage device stores and processes data that relates to each of the respective mounting members. In this way, the data can be processed by a control device of the component mounting unit for utilization during every stage of the component mounting operation.

In an embodiment, the data storage device stores a variety of different process or characteristic data, such as, the geometrical or positioning data that has been measured relative to a fixed reference. This data can then be utilized for readily calibrating one or more of the automatic component mounting members virtually upon immediate installation. To accomplish this virtual real-time calibration, the control

device communicates with the data storage device in order to configure the movement and positioning of the mounting member so that the mounting member is essentially ready for operation once it has been installed. In this way, the time-consuming calibration step subsequent to installation is effectively eliminated.

In an embodiment, the manufacturer identification codes of the different mounting members can be stored in the data storage device. This type of data is then processed by the control device for recognizing or identifying defective mounting members.

In a preferred embodiment, the functional or operational data of the mounting members is stored and processed by the control device via the data storage device for utilization during the component mounting operations. In this way, the control device can optimally control the operation of the component mounting members.

In an embodiment, the data exchange between the respective storage devices of each of the members and the control device occurs via electrical lines.

In an embodiment, a wireless data exchange occurs between the storage device and the control device. In this way, the process control equipment that is necessary for the operation of the automatic component mounting unit is minimized because additional electrical plug-connections are not required when a wireless data communication is utilized.

In a preferred embodiment, the mounting head member includes a number of holding elements, such as, suction pipettes or other like holding elements, in order to securely hold the component. Each of the suction pipettes includes a retracted and an extended position wherein the difference of the retracted and extended positions of each of the suction pipettes on the component mounting head can be calculated for

purposes of calibrating the component mounting head for precise and controlled mounting of the component on the substrate.

In a preferred embodiment, the data storage devices include a transponder device, that is, a device that can process characteristic data; i.e., read and write data, in a contactless manner and that does not require its own energy supply. In addition, the transponder devices can be readily integrated within each of the mounting members.

In an embodiment, the component mounting member includes a component mounting head member, a component feeding member, a component sensor member or other like member. Each of the mounting members has a respective data storage device that stores process data which is specific to its respective mounting member. The process data varies with respect to the type of component that is to be mounted.

VI. ISSUES

- i. Whether or not claims 10, 12-24, 26, 29, and 30 are anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,402,564 to Tsukasaki;
- ii. Whether or not claims 11 and 25 are unpatentable under 35 U.S.C. § 103(a) by U.S. Patent No. 5,588,195 to Asia;
- iii. Whether or not claims 27, 28, 31, and 32 are unpatentable under 35 U.S.C. § 103(a) by U.S. Patent No. 5,402,564 to Tsukasaki in view of U.S. Patent No. 5,588,195 to Asia, and further in view of U.S. Patent No. 6,002,650 to Kuribayashi.

VII. GROUPING OF THE CLAIMS

Appellant respectfully requests, for the purposes of this Appeal, that the grouping of the claims be as follows:

- Group (i) including claims 10-17, and 16-18;
- Group (ii) including claims 15, 19, 20, and 21; and
- Group (iii) including claims 22-32.

VIII. ARGUMENTS

A. Rejection Under 35 U.S.C. § 102

The Examiner has rejected claims 10, 12-24, 26, 29, and 30 under 35 U.S.C. § 102(b) as being anticipated by Tsukasaki, U.S. Patent No. 5,402,564 (the Tsukasaki '564 patent). Appellant respectfully submits that the aforementioned claims are not anticipated by the Tsukasaki '564 patent for reasons expressed hereafter.

TAKEN FROM 3-17-03 AMENDMENT:

In the Examiner's Office Action, the Examiner alleges that, in col. 8, lines 34-62, Tsukasaki et al. discloses a plurality of mounting members each including a storage device. However, Applicants respectfully note that the storage device 503 according to Tsukasaki et al., is not a storage device of the mounting members 200, but is a storage device of the controller 500 (noting that the passage mentioned by the Examiner indicates that the controller 500 comprises...storage portion 503...). Further, in Tsukasaki et al., it is taught to store information regarding where components have to be placed and to control placement of the components. This is clearly contrary to the present invention as claimed, as will be explained as follows.

With regard to claim 10 of the present application, for example, the claim sets forth an automatic component mounting unit comprising a plurality of mounting members “each of said mounting members including a respective data storage device”. Thus, Applicants have not claimed a single data storage device used in conjunction with all mounting members, but instead, have claimed a respective data storage device for each of the mounting members.

Further, as additionally set forth in claim 10, each of the data storage devices transmits an amount of mounting process data, wherein the mounting process data “is utilized so as to adapt each of said mounting members for optimal use during said mounting of said electrical component”. Thus, not only does each mounting member include a storage device associated therewith, but the storage device stores information which adapts the mounting member for optimal use during mounting of electrical components. As such, it is possible to interchange any mounting member, which can be a mounting head, feeding member, sensor, etc., without the need of calibrating the whole mounting apparatus. This is further discussed on page 3 of the original application.

Applicants respectfully submit that Tsukasaki et al. fails to teach or suggest a plurality of mounting members, “each of said mounting members including a respective data storage device” as set forth in claim 10, as well as each of the data storage devices transmitting an amount of mounting process data, wherein “said amount of mounting process data is utilized so as to adapt each of said mounting members for optimal use during said mounting of said electrical component”. Tsukasaki et al. is merely directed to controlling the mounting members, and does not include mounting

members with separate storage devices, which can essentially be interchanged and reset for optimal use, without the need to calibrate whole apparatus. Thus, in addition to the arguments previously set forth, Applicants respectfully submit that claim 10 of the present application is even further patentable over Tsukasaki et al.

With regard to claim 22, Applicants note that claim 22 has been amended to clarify that each of the mounting members include a respective data storage device, and to clarify that mounting process data is adapted to be stored in the data storage devices and is utilized to adapt each of the mounting members for optimal use during the mounting of an electrical component, somewhat similar to that of claim 10. Accordingly, claim 22 is also allowable over Tsukasaki et al.

Finally, with regard to claim 15, this claim also claims a plurality of mounting members, "each of said members includes a respective data storage device for storing an amount of process data", wherein said control device utilizes "said amount of process data so as to readily adapt each of said mounting members for optimal use upon installation of each of said mounting members to said automatic component mounting unit". Accordingly, at least such limitations are not taught or suggested by Tsukasaki et al.

Accordingly, Applicants respectfully submit that each of pending independent claims 10, 15 and 22 of the present application are clearly allowable over Tsukasaki et al., taken alone or in combination with any of the references. Accordingly, withdrawal of the Examiner's rejection is respectfully requested. With regard to each of the dependent claims, these claims are allowable for at least the reasons previously set forth regarding their corresponding independent claims.

B. Rejections Under 35 U.S.C. § 103

The Examiner has rejected claims 11 and 25 under 35 U.S.C. § 103(a) as being unpatentable by the Tsukasaki '564 patent in view of Asia, U.S. Patent No. 5,588,195 (the Asia '195 patent). Appellant respectfully submits that the aforementioned claims are not anticipated by the Tsukasaki '564 patent or the Asia '195 patent for reasons expressed hereafter.

The Examiner has rejected claims 27, 28, 31, and 32 under 35 U.S.C. § 103(a) as being unpatentable by the Tsukasaki '564 patent in view of the Asia '195 patent, and further in view of Kuribayashi, U.S. Patent No. 6,002,650 (the Kuribayashi '650 patent). Appellant respectfully submits that the aforementioned claims are not anticipated by the Tsukasaki '564 patent, Asia '195 patent, or the Kuribayashi '650 patent for reasons expressed hereafter.

TAKEN FROM 3-17-03 AMENDMENT:

These rejections are respectfully traversed, in that, even assuming *arguendo* that either one or both of Kuribayashi or Asia could be combined with Tsukasaki et al., which Applicants do not admit, each of the aforementioned references would still fail to make up for the aforementioned deficiencies of Tsukasaki et al. Accordingly, at least for the reasons previously set forth regarding their corresponding independent claims, Applicants respectfully submitted that dependent claims 11, 25, 27, 28, 31 and 32 are allowable over the prior art of record. Accordingly, withdrawal of the Examiner's rejections is respectfully requested.

IX. CONCLUSION

It is respectfully submitted that the rejections of each of pending claims 10-32 as being unpatentable under 35 U.S.C. § 102 over the Tsukasaki '564 patent, and/or as being unpatentable over the Tsukasaki '564 patent in view of the Asia '195 patent, and/or as being unpatentable over the Tsukasaki '564 patent in view of the Asia '195 patent and further in view of the Kuribayashi '650 patent, is in error and should be reversed. Appellant respectfully submits that the Examiner has ignored many limitations present in the various claims and has ignored preambles of the claims which are legally limiting and which establish at least part of the claims meaning or significance. Accordingly, for at least the aforementioned reasons, Appellant respectfully requests the Honorable members of the Board of Patent Appeals and Interferences to reverse each of the outstanding rejections in connection with the present application and permit each of claims 10-32 to be allowed in connection with the present application.


Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Donald J. Daley, Reg. No. 34,313 at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

By:

 #4/6/15
Donald J. Daley, Reg. No. 34,313
P.O. Box 8910
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(703) 668-8000

DJD/RFS:dr:ewd

Enclosures: Three (3) copies of Appellant's Brief
Appendix -- Clean version of pending claims

APPENDIX

10. An automatic component mounting unit for mounting an electrical component onto a substrate of an electrical assembly, comprising:

a plurality of mounting members disposed for mounting said electrical component, each of said mounting members including a respective data storage device, wherein each of said data storage devices stores an amount of mounting process data related to a fixed reference mark, for each of said respective mounting members; and

a control device disposed for controlling said automatic component mounting unit, each of said data storage devices transmitting said amount of mounting process data to said control device, wherein said amount of mounting process data is utilized so as to adapt each of said mounting members for optimal use during said mounting of said electrical component.

11. An automatic component mounting unit according to claim 10 wherein each of said data storage devices includes a transponder unit for communicating with said control device in a contactless manner, and wherein said transponder unit is directly attached to each of said mounting members.

12. An automatic mounting unit according to claim 10 wherein said mounting members include a mounting head member.

13. An automatic mounting unit according to claim 10 wherein said mounting members include a mounting feeding member.

14. An automatic mounting unit according to claim 10 wherein said mounting members include a mounting sensor member.

15. A system for operating an automatic component mounting unit for mounting an electrical component onto a substrate of an electrical assembly, comprising:

a plurality of mounting members installed for mounting said electrical component, wherein each of said members includes a respective data storage device for storing an amount of process data related to a fixed reference mark; and

a control device disposed for communicating with each of said data storage devices for processing said amount of process data, wherein said control device utilizes said amount of process data so as to readily adapt each of said mounting members for optimal use upon installation of each of said mounting members to said automatic component mounting unit.

16. An automatic component mounting unit according to claim 10, wherein the mounting process data includes at least one of geometrical and positioning data measured relative to a fixed reference mark.

17. An automatic component mounting unit according to claim 10, wherein said control device receives said amount of mounting process data to configure movement and positioning of the plurality of mounting members.

18. An automatic component mounting unit according to claim 16, wherein said control device receives said amount of mounting process data to configure movement and positioning of the plurality of mounting members.

19. A system as claimed in claim 15, wherein said amount of process data includes at least one of geometrical and positioning data measured relative to a fixed reference mark.

20. A system as claimed in claim 15, wherein said control device receives said amount of process data to configure movement and positioning of the plurality of mounting members.

21. A system as claimed in claim 19, wherein said control device receives said amount of process data to configure movement and positioning of the plurality of mounting members.

22. An automatic component mounting unit for mounting an electrical component onto a substrate, comprising:

a plurality of mounting members disposed for mounting an electrical component, wherein each of said mounting members includes a respective data storage device, adapted to store mounting process data related to a fixed reference mark; and

a control device, adapted to control said plurality of mounting members, wherein the mounting process data is utilized by the control device so as to adapt each of the mounting members for optical use during the mounting of an electrical component.

23. The automatic component mounting unit of claim 22, further comprising a mounting head member, including the plurality of mounting members.

24. The automatic component mounting unit of claim 23, wherein the mounting head member includes a storage device for storing the mounting process data.

25. The automatic component mounting unit of claim 24, wherein the storage device is a transponder, adapted to communicate with the control device in a contactless manner.

26. The automatic component mounting unit of claim 22, wherein the mounting process data is transferred from a data storage medium.

27. The automatic component mounting unit of claim 23, wherein the mounting process data is stored on a data storage medium, insertable into at least one of the mounting head member and control device.

28. The automatic component mounting unit of claim 22, wherein the mounting process data is stored on a data storage medium, insertable into the control device.

29. An automatic component mounting unit according to claim 22, wherein the mounting process data includes at least one of geometrical and positioning data measured relative to a fixed reference mark.

30. An automatic component mounting unit according to claim 22, wherein said control device receives said amount of mounting process data to configure movement and positioning of the plurality of mounting members.

31. An automatic component mounting unit according to claim 27, wherein the mounting process data includes at least one of geometrical and positioning data measured relative to a fixed reference mark.

32. An automatic component mounting unit according to claim 27, wherein said control device receives said amount of mounting process data to configure movement and positioning of the plurality of mounting members.

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TRANSMITTAL FORM

Do not be used for all correspondence after initial filing

*63 copies

Application Number	09/559,886 ✓
Filing Date	April 26, 2000
First Named Inventor	Wolfgang HUBER
Group Art Unit	3729
Examiner Name	A. Dexter Tugbang
Attorney Docket Number	32860-000241/US

#25 Brief

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GW08/28/03

ENCLOSURES (check all that apply)

☒ Fee Transmittal Form☒ Fee Attached☐ Amendment - Preliminary☐ After Final☐ Affidavits/declaration(s)☐ Extension of Time Request☐ Express Abandonment Request☐ Information Disclosure Statement☐ Certified Copy of Priority Document(s)☐ Response to Missing Parts/Incomplete Application☐ Response to Missing Parts under 37 CFR 1.52 or 1.53☐ Assignment Papers (for an Application)☐ Letter to the Official Draftsperson and () Sheets of Formal Drawing(s)☐ Licensing-related Papers☐ Petition☐ Petition to Convert to a Provisional Application☐ Power of Attorney, Revocation Change of Correspondence Address☐ Terminal Disclaimer☐ Request for Refund☐ CD, Number of CD(s) _____☐ After Allowance Communication to Group☒ LETTER SUBMITTING APPEAL BRIEF AND APPEAL BRIEF (w/clean version of pending claims)☐ Appeal Communication to Group (Appeal Notice, Brief, Reply Brief)☐ Proprietary Information☐ Status Letter☒ Other Enclosure(s) (please identify below):
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Remarks

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name

Harness, Dickey & Pierce, P.L.C.

Attorney Name
Donald J. DaleyReg. No.
34,313

Signature

[Signature] #46,175

Date

August 18, 2003

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Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

FEE TRANSMITTAL for FY 2003

Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 320

Complete If Known

Application Number 09/559,886
Filing Date April 26, 2000
First Named Inventor Wolfgang HUBER et al.
Examiner Name A. Dexter Tugbang
Group / Art Unit 3729
Attorney Docket No. 32860-000241/US

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METHOD OF PAYMENT (check all that apply)

☒ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None

☐ Deposit Account:

Deposit
Account
Number

08-0750

Deposit
Account
Name

Harness, Dickey & Pierce, P.L.C.

The Commissioner is authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☒ Credit any overpayments
☒ Charge any additional fee(s) during the pendency of this application
☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

FEE CALCULATION

1. BASIC FILING FEE

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1)

(\$ 0)

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
-20 **	= 0	X	= 0
Independent Claims	-3 **	= 0	X
Multiple Dependent		X	= 0

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	42	** Reissue independent claims over original patent
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2)

(\$ 0)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet.	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	320
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
1807	50	1807	50	Processing fee under 37 CFR 1.17 (q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	750	2801	375	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify) _____

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 320)

SUBMITTED BY

Complete (if applicable)

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[Signature] #46.175

Date

August 18, 2003

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